

Preface

History needs to be constantly re-written—not in order to supersede the work of earlier historians, itself a permanent part of history—but to enlarge their vision with the new material and the unique illumination provided by later experience.

When trying to give university students of botany an inkling of the history of their subject, as an adjunct to the more serious business of teaching its latest developments, I was struck by the lack of a history of botany as seen from the standpoint of today. The histories of E. F. H. Meyer (1854) and Julius Sachs (1865) are indispensable but are now classics, whilst the *Short History of the Plant Sciences* by H. S. Reid (1942) and the *Short History of Botany* (in Russian, Moscow 1968) by N. A. Basilevskaya, I. P. Belokon and A. A. Tscherbakova, and the *Geschichte der Botanik* (1973) by K. Mägdefrau, although useful, are not entirely adequate to fulfil this need. It was with much misgiving that I began writing a general history of botany, prompted by the suggestion of a colleague, and encouraged to proceed by others to whom I spoke of my intention. My only qualification for the task, which has proved far more laborious and time-consuming than I anticipated, is a deep and life-long interest in the science of plants and in its history. The only merit I would claim for this interpretation of botanical history is that it is based on first-hand study of as many of the primary sources as time and my own limitations permitted.

The distinctive feature of science as a human activity is the attempt to find a structure of causal laws, a guiding theory, in the relations between the particular phenomena it is concerned with. This is true of the science of botany, even though it necessarily contains a large descriptive element. In tracing its history I have therefore taken as my central theme the evolution of botanical theory, of what men at different times have thought about plants as a class of beings. The growth of specifically botanical concepts from the existing knowledge of plants, and the influence of these concepts on the further course of dis-

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covery, are the twin threads of a long and fascinating story. Choice of the term botanical science in the title is deliberate; it gives emphasis to the viewpoint adopted, and also happens to be a closer rendering of the older name for the science of plants.

The history of botany has many colourful facets, the study of which throws light on the sources of its movement. Botany is indeed embedded in human history, from its origins in two of the most ancient sciences of all, magic and medicine, through its long association with pharmacology, agriculture and horticulture, to its part in the exploration of the world, and in ensuring the supply of food and raw materials for the rise and maintenance of modern industrial society. Botany has drawn strength from other sciences, and contributed to them in return; and at various stages has reflected in its thought the philosophical currents of the time. Before everything, botany is the creation of botanists: knowledge of their lives and tribulations, their characters and motives, are part of the fabric of its history. All these aspects have some place in our chronicle in so far as they contribute to deeper understanding of the causes and the course of botanical progress.

My aim has been to write in a form sufficiently concise and uncluttered by detail to be comprehensible to readers who are not botanists and have no more than a general interest in the history of science, whilst at the same time giving botanists an adequate account of the development of the principles and the factual basis of their science. The text is a continuous story, complete in itself, which can be read without any reference to the notes. The copious and sometimes discursive apparatus of notes is intended for those readers, and particularly for those botanists, who may be interested in additional facts, comments, and source material, which amplify the interpretation presented in the text. Reference to the primary literature and to many secondary sources will be found in the text or in the notes, but I have not included a bibliography of all the works consulted in the preparation of this book, as it could well exceed in length the notes already included.

Technical terms have been kept to a minimum but obviously cannot be excluded from a work of this nature. Some explanation is indicated for most of them, but others, whose meaning is not easily conveyed to the non-botanist, can probably be taken by most readers in their stride.

I have freely quoted actual words of many botanists of the past in

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order to bring their thoughts as vividly as possible to modern readers. Translations from Greek, Latin, French, German and Russian are generally my own, but where there exist scholarly translations of Greek and Latin sources I have naturally made grateful use of them.

The naming of a specific plant referred to in the older literature often presents grave difficulties due to doubts about its identity, and to the absence of systematic nomenclature before the Linnean reform. For older plant references I have used the nearest English vernacular name, or occasionally the contemporaneous Latin name (not italicized), when these give as close an identification as is attainable; sometimes the italicized Latin name of a modern genus or species is used, if identification is fairly certain. For post-Linnean references the author's Latin designation (when one is given) is quoted in italics, but no account is taken of subsequent taxonomic changes. I hope this rough and ready system will sufficiently indicate the likely identity in most cases, without being either misleading or too repugnant to strict taxonomic canons.

I am deeply grateful to Dr Joseph Needham, FRS, Director of the East Asian History of Science Library, and to Mr D. M. Henderson, Regius Keeper, Royal Botanic Garden, Edinburgh, for their helpful comments on the manuscript. Needless to say, I alone am responsible for all the inevitable errors of ignorance and inadvertence which remain, as I am for the opinions expressed.

My thanks are due to the Governing Body of Chelsea College, University of London, for the award of a Professorial Fellowship, during the tenure of which this history was begun, and to the Leverhulme Trust for the award of an Emeritus Fellowship, which greatly assisted me in gathering together much of the necessary material for bringing it to completion.

Edinburgh
July 1981

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